

Habenaria sahyadrica (Orchidoideae; Orchidaceae) – New report to the Eastern Ghats of Tamil Nadu

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ABSTRACT

Habenaria sahyadrica K.M.P. Kumar et al. has been recorded from Kolli hills of Namakkal district in Tamil Nadu for the first time. The terrestrial orchid species described from the Western Ghats of Kerala and subsequently recorded in Karnataka. The present communication added the species additions to the Orchids of Eastern Ghats of Tamil Nadu. A detailed description, distribution, associated plants and coloured photographs are provided for easy identification. Threat status and conservation measures of the species is also discussed.

Keywords: terrestrial orchid species; *Habenaria sahyadrica*; conservation

1. INTRODUCTION

The genus *Habenaria* Willd. is represented 894 accepted species making largest subfamily Orchidoideae (POWO, 2021), with centres of diversity in Brazil, southern and central Africa, and East Asia (Kurzweil and Weber 1992), most of which are terrestrial plants. In India, the genus is represented by 72 species, of which 36 are endemic (Misra 2007). About 45 species of *Habenaria* are distributed in the Western Ghats of India, of which 21 species are endemic (Jalal and Jayanthi 2012). In Tamil Nadu, 26 species were reported so far with 17 endemics (Karuppusamy et al., 2021). These plants are characterised by frequently having simple or bifid petals, a tripartite lip, long rostellar arms, stalked stigmas and a well-developed nectariferous spur (Pridgeon et al. 2001).

During floristic exploration in Kolli hills of Tamil Nadu, the author collected an interesting *Habenaria* species from the evergreen forests along road sides on the way to Kulivalvau of the Kollimalai forest area, Namakkal District, during November 2020. Critical studies have revealed that the species is matched with recently published species *H. sahyadrica* which is not reported to the Eastern Ghats of Tamil Nadu. The voucher specimen deposited in the Sri Ganesan Herbarium (SGH), Department of Botany, The Madura College, Madurai. This communication is reported that the *H. sahyadrica* is extended the distribution in the Eastern Ghats of Tamil Nadu with colour photographs and the relevant descriptions are provided for easy identification.

2. TAXONOMY

Habenaria sahyadrica K.M.P.Kumar et al., Phytotaxa 244: 196, 2016; Jayanthi et al., Ind. J. Forest. 40(1): 77. 2017. (Fig. 1).



Fig. 1. *Habenaria sahyadrica* K.M.P. Kumar et al. a. Habitat with associate plants; b. Flowering population; c. Tuberous root; d. Inflorescence; e. Flower

Terrestrial herbs, 75 cm tall, stem cylindric, leafy from base upwards mainly on the upper two thirds of stem. Stem closely covered by leaf sheath. Tuber single, globose to ellipsoidal-sub-globose 40 mm diameter and placed directly underneath the stem, some fleshy, unbranched fibrous roots associate with a tuber. Leaves 5–8, alternate, sessile, elliptic-lanceolate, 10.0–14.0 × 2.5–3.5 cm, acute, base narrow, petiole like, glabrous on both sides; leaf margin conspicuously undulate. Inflorescence terminal, racemose. Peduncle 15–25 cm long, glabrous, clothed with elliptic, acuminate, sterile greenish bracts completely covering the pedicel, 3.4–4.5 cm long, glabrous. Raceme 10–15 cm long, 8 cm broad, 10–20-flowered. Floral bracts elliptic-attenuate, trinerved, glabrous, 20.0–20.8 × 8.0–10.0 mm. Flowers pale greenish-white; dorsal sepal ovate, 6-nerved out of which 3 nerves continuing to the apex, 10–13 × 3–5 mm, densely hispid on upper part, lower part glabrous; lateral sepals ovate-elliptic, sub-falcate, acute, trinerved, 10–13 × 4–6 mm, densely hispid on upper part, lower part glabrous; petals bipartite, posterior lobe filiform, falcate, obtuse, connivent with dorsal sepal, 10–15 mm long, glabrous, anterior lobe slightly narrower, filiform, apex acute and curving upwards, 14–18 mm long; lip trilobed; midlobe filiform, dilated towards rachis, 20–24 mm long, glabrous; lateral lobes slightly narrower, filiform and curving upward, 15–18 mm long, glabrous; spur green, cylindrical, clavate at apex, decurved, 17–24 mm long, glabrous; column greenish-yellow, 1.5 mm long, glabrous; anther locules large, 3.0 × 1.5 mm, glabrous; canals erect 2 mm long, ovary fusiform, glabrous, 18–22 mm long; pollinia yellow, pyriform, 2.0 × 1.5 mm; caudicles transparent, longer than the pollinia, 5 mm; rostellum 3 mm long. Capsule curved, oblong-ellipsoidal, to 4 cm long, cylindric, 6-ribbed, glabrous, apex with persistent column.

Flowering & Fruiting: November – January.

Specimen examined: INDIA: Tamil Nadu, Namakkal District, Kolli hills, on the way to Kulivalavu, ±1150 m. 12 November 2020, S. Karuppusamy 2504 (SGH).

Habitat ecology: *H. sahyadrica* grows under the evergreen forest floor on the way to Kulivalavu of the Kolli hills in the Eastern Ghats at an elevation ± 1150 m. A small evergreen forest patch crossed by a motor road and very high human interference of the area faced the great threatening of the plant diversity. A countable individual plants of *H. sahyadrica* are growing along the sides of ghat road with other associated plant species such as *Ageratina adenophora* Spreng., *Asystasia chelonoides* Nees, *Bidens Pilosa* L., *Canthium rheedii* DC., *Cipadessa baccifera* (Roxb.) Miq., *Impatiens vaiyapurii* Karupp. & V. Ravich., *Jasminum flexile* Vahl, *Murdannia zeylanica* G. Bruckern, *Remusatia vivipara* (Roxb.) Schott., *Teucrium wightii* Hook.f., *Physalis peruviana* L., *Smilax aspera* L., *Strobilanthes cordifolia* (Vahl) J.R.I.Wood, *Zeuxine grandis* Seidenf., grasses and ferns (Fig. 1).

Threat status: This species has been described originally from the type locality of Muthikulam forest of Kerala, subsequently in BRT-Wildlife Sanctuary of Karnataka and now reported to the Kolli hills of Tamil Nadu. The area of occupancy is estimated to be widened with several populations around more than 800 km². The present study showed that this species is distributed sporadically in southern Indian forests both in the Western Ghats and the Eastern Ghats. It is a seasonal terrestrial species and not availed the clear population status in the Peninsular India and hence it may be categorized under Data Deficient (DD) (IUCN, 2019).

Conservation measures:

The geophytic habit of *H. sahyadrica*, its adaption to humid areas of the forest underfloor, and its association with other plant species that together to form dense populations. But the scarcity of records might be attributed with rarity of the species. At present the entire Kolli hill range observed only 120 individuals within 2 km² area. The habitat of the species is more close vicinity of motor road and cultivation lands. This population is facing great threat due to habitat destruction and road widening activities. Hence the attention needed for urgent conservation measures to protect the population from the erosion of rare *H. sahyadrica*.

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Ethical approval

Habenaria sahyadrica species was used in the study. The ethical guidelines for plants & plant materials are followed in the study. Ethical approval has received from the head office, Botanical Survey of India, southern regional centre, Coimbatore, India.

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Conflicts of interests: The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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